Technical Specification Group Services and System Aspects   ***TSGS#12(01)0393***
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Source: **MCC**
Title: <u>Summary of</u> **Content of Rel-4 and <u>foreseen content of</u> Rel-5**

<u>Revision marks are used to show the differences with the equivalent document issued at the end of TSG SA#11 (SP-010209).</u>

Introduction

This document describes the actual content of Rel-4 and the foreseen content of Rel-5.

It includes the results of TSG RAN, T, CN and SA#~~11~~12.

Only the names of the features are provided here. More information on the features can be found in the Work Plan, which last available version is ~~March~~June, 20th~~–11th~~ (tdoc SP-~~010184~~010291), i.e. not including the results of TSG~~s~~ ~~SA#11~~12. As soon as available, the newer version of the Work Plan including the results of ~~SA~~TSG #~~11~~12, in line with this document, will be available on the server: a notification will be sent on the 3GPP SA, CN, RAN and T e-mail lists.

Actual content of Release 4

Evolutions of the Transport in the UTRAN – Rel-4 part
- QoS optimisation for AAL2 connections over Iub and Iur interfaces.
- Transport bearer modification procedure on Iub, Iur, and Iu (note: this was previously known as "Migration to modification procedures").

Evolutions of the transport in CN – Rel-4 part
- IP transport of CN protocol.
- FS on transport and control separation in PS domain (this FS will not lead to any feature).

Improvements of Radio Interface - Rel-4 part
- UTRA repeater specification
- DSCH power control improvement in SHO.

Low chip rate TDD option

RAB Quality of Service Negotiation over Iu during relocation

RAN improvements - Rel-4 part
- RRM optimization for Iur and Iub
- Node B synchronisation for TDD
- RAB support enhancement

Transparent End-to-End PS Mobile Streaming Applications

Emergency call enhancements – Rel-4 part: for CS based calls

Enable bearer independent CS architecture (Lawful interception still in progress at S3)

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Real time Facsimile (Rel-4)

MExE Enhancements - Rel-4 part (the main enhancements are Third MExE classmark for a new small-footprint Java platform, support of SDR concepts by software download and Security enhancements)

Tandem Free Operation

Transcoder Free Operation

ODB (Operator Determined Barring) for Packet Oriented Services

~~Multimedia Codecs~~

Multimedia Messaging Service

UICC/(U)SIM enhancements and interworking
- Common PCN Handset Specification (CPHS)

(U)SIM toolkit enhancements
- USAT local link
- UICC API testing (main task is the test specification for the Java API, as defined in release 99).
- Protocol Standardisation of a SIM Toolkit Interpreter (Stage 2 expected at TSG-T #12 for approval but remains in Rel-4)

Advanced Speech Call Items enhancements (created for Rel-4 to maintain the specs only, i.e. not a new feature).

Terminal Interfaces - Rel-4 part
- AT Commands enhancements: specification of AT commands for new services (closed even if the goal was not completely reached)
- Continues evolution of Synchronization protocol
- Terminal Local Model

Charging and OAM&P
Note: the testing and OAM activities are not subject to the TSG #~~12~~ 11 deadline to be part of Release 4.
- OAM Architecture, and Management of Configuration, Fault, Performance and Charging should be completed by June
- UTRAN Operations & Maintenance procedures

Reliable QoS for PS domain - for Rel-4: QoS in UMTS only

GERAN WI status - Rel-4 part (to be confirmed by next GERAN plenary)
- GERAN/UTRAN interface evolution of Iups
- GERAN/UTRAN interface evolution of Iucs
- Low chip rate TDD interworking with GERAN
- Gb over IP & Gb enhancements (Stage 2 & Stage 3)
- 700 MHz spectrum support
- Wideband telephony services (UMTS) GMSK support
- LCS for GERAN Stage 2 (CS mode & Timing Advance positioning)

LCS enhancements - Rel 4 ~~(IPDL for TDD methods)~~:
- LCS in the 3G PS-domain (LCS in 2G PS domain for Rel5)
- Location report at the Event "UE becomes reachable"

- Support of the following positioning methods: cell coverage based, OTDOA, A-GPS
- LCS support in TDD mode
- OSA includes support for LCS API

Small Technical Enhancements and Improvements for Release 4

Network Domain Security: MAP aspects

OSA enhancements - Rel-4 part
- Support for LCS API
- Interactions OSA - e-commerce

Miscellaneous UE Conformance Testing Activities and any other UE Testing activity - Rel-4 part:
- Testing of several Rel-4 features approved at TSG #12 (note: the testing activities are not subject to the TSG#11 deadline for being included in Rel-4).

Foreseen content of Release 5

Evolutions of the Transport in the UTRAN – Rel-5 part
- IP Transport in the UTRAN
- Evolution of transport in UTRAN and GERAN

High Speed Downlink Packet Access

Improvements of Radio Interface - Rel-5 part
- FDD BS classification (expected completion 09/01)
- TDD BS classification (expected completion 06/01)
- BSS classification for 1.28 Mcps TDD
- Terminal power saving features
- Improvements of inter-frequency and inter-system measurement
- Hybrid ARQ II/III
- Improved usage of downlink resource in FDD for CCTrCHs
- Multiple Input Multiple Output antennas (MIMO)
- Enhancements on the DSCH hard split mode
- Gated DPCCH transmission

Evolutions of the transport in CN – Rel-5 part
- FS on SS7 signalling transportation in the CN with SCCP-User Adaptation (SUA).

RAN improvements - Rel-5 part
- RRM optimization for Iur and Iub: Separation of resource reservation and radio link activation
- RAB support enhancement: Issues other than ROHC
- Radio Link Timing Adjustment
- Separation of resource reservation and radio link activation
- Traffic termination point swapping
- Node B synchronisation for 1.28 Mcps TDD
- Iur common transport channel efficiency optimisation
- Iur neighbouring cell reporting efficiency optimisation
- UE specific beamforming with dedicated pilots (to be confirmed)

Global Text Telephony (target completion date: June 2001)

IP-based Multimedia Services (includes multimedia codec)

Emergency call enhancements – Rel-5 part: For IP & PS based calls

Push Services

VHE improvements

OSA enhancements Rel5 (to be clarified)
- OSA APIs for Multimedia CC
- OSA security
- Retrieval of Terminal capabilities

CAMEL phase 4

MExE Enhancements - Rel-5 part

Messaging enhancements
- Multimedia Messaging Service enhancements
- EMS enhancements

(U)SIM enhancements
- Transport enhancements
- USIM toolkit enhancements
- Enhancements to (U)SIM toolkit secure messaging

GERAN WI status - Rel-5 part
- Evolution of transport in UTRAN and GERAN
- Evolution of the transport for A interface
- GERAN support for IP multimedia
- Alignment of 3G functional split and Iu
- GERAN enhancements for streaming services
- Real Time QoS for packet services including VoIP (UTRAN)
- Wideband telephony services (UMTS) 8-PSK support
- GERAN MS + BTS Conformance test for WB AMR
- LCS for GERAN (E-OTD and GPS positioning)

S4 WI status (Rel-5)
- Wideband Codec: 8-PSK performance
- Audio visual terminal characteristics

Subscription Management
- Operational Requirements and Specifications
- Co-ordination planned with other working groups on e.g. VHE enhancement or Charging and OAM&P

LCS enhancements: Rel-5 part (open LCS interface for UMTS and GERAN, new positioning methods)
- Location services in GERAN PS domain
- Event based LCS request and Periodic LCS request (uncertain)
- LCS interoperation stage 2 aspects (uncertain)
- LCS support in the IMS (uncertain)
- Standardization of the Le interface
- Localised services enabling features (uncertain)

- Adding the parameter "Velocity" in stage 2 and stage 3 specifications (stage 1 requirement exists)

Reliable QoS for PS domain - For Rel-5: End-to-end QoS

New WI approved at RAN#11:
- ~~HSDPA~~
- ~~Mitigating the Effect of CPICH Interference at the UE~~
- ~~Introduction of SIR measurement~~
- ~~Enhancement on the DSCH hard split mode~~
- ~~Enhancement of Broadcast and Introduction of Multicast Capabilities in RAN~~
- ~~Improvement of Radio Resource Management across RNS and RNS/PSS~~
- ~~Traffic Termination Point Swapping~~
- ~~UE positioning enhancements for 1.28 Mcps TDD~~
- ~~Node B Synchronisation for 1.28 Mcps TDD~~
- ~~RL Timing Adjustment~~
- ~~Gated DPCCH Transmission~~
- ~~Separation of resource reservation and radio link activation~~

Wideband AMR
- Wideband Codec: 8-PSK performance

~~Enhancements to (U)SIM toolkit secure messaging~~

Terminal Interfaces - Rel-5 part (vObjects and Other Constructs for Use in Data Synchronization).

Intra Domain Connection of RAN Nodes to Multiple CN Nodes

Support of Presence capability

Network Domain Security: IP aspects

Miscellaneous UE Conformance Testing Activities and any other UE Testing activity - Rel-5 part:
- Testing of several Rel-5 features.

Other

Release-independent:

UMTS 1800

UMTS 1900

~~Miscellaneous UE Conformance Testing Activities and any other UE Testing activity: Several work items will be presented for approval at TSG #12 (note: the testing activities are not subject to the TSG#12 deadline for being included in Rel-4).~~

Beyond Rel-5

Security Enhancements
- Enhanced HE control of security (including positive authentication reporting): Delayed to Post Rel-5

Not decided yet:

Extension of Streaming

Multicast and Enhancements of Broadcast

UE Management

Security Enhancements (check again at TSG #12)
  - Network Domain Security
  - IMS Security

OSA enhancements (check again at TSG #12)

MAP security

Deleted at TSG #11

Bearer Modification without Pre-Notification

CS Multimedia services

QoS for CS services at HOs (inter-MSC and SRNS change)

FS on UICC/ME Performance Enhancements (transferred to ETSI Project Smart Card Platform – EP SCP)

UICC/USIM database specification

UE triggered authentication during connections

Terminal Interfaces - Rel-4 part

Alternatives to AT commands